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## Two new species of *Cassida* LINNAEUS from southern India (Coleoptera: Chrysomelidae: Cassidinae)

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ABSTRACT. *Cassida nigrohumeralis* and *C. eximia*, new to the science, are described from southern India. *C. nigrohumeralis* is close to *C. cherrapunjiensis* MAULIK, 1919, while *C. eximia* has no close relatives in the Oriental Region.

Key words: entomology, taxonomy, new species, Coleoptera, Chrysomelidae, Cassidinae, *Cassida*, Oriental Region.

The genus *Cassida* LINNAEUS, 1758 with 407 described species is the largest within Cassidinae, distributed in whole Old World with single native species in North America. Oriental fauna is quite rich, with 168 recorded species, 49 of them were recorded from India (MAULIK 1919, BOROWIEC 1999, BOROWIEC & ŚWIĘTOJAŃSKA 2002). In the recently studied materials we found specimens of two new species. Their descriptions are given below.

### *Cassida nigrohumeralis* n. sp.

#### ETYMOLOGY

Named after black humeral spots.

#### DIAGNOSIS

It is close to *C. cherrapunjiensis* MAULIK, 1919 from NE India, S China and Vietnam (see colour photo in BOROWIEC & ŚWIĘTOJAŃSKA 2002). Both species have black humeral spots, simple claws, and mostly black elytral disc. *C. nigrohumeralis*

differs in completely black pronotal disc (yellowish to yellowish brown, sometimes with small basal brownish spot in *C. cherrapunjiensis*), only slightly, regularly convex intervals on slope (in *C. cherrapunjiensis* pale coloured parts of intervals on slope are distinctly elevated), deep and more distinctly punctate impressions on pronotal disc (very shallow, not or indistinctly punctate impressions in *C. cherrapunjiensis*). In *C. nigrohumeralis* scutellum and elytral disc is almost completely black, with only one small yellowish spot in 2/3 length of 4<sup>th</sup> row, while in *C. cherrapunjiensis* usually elevated borders of postscutellar impression and small spots in half length and 2/3 length of disc are yellowish, also scutellum is mostly yellow. Black humeral spots in *C. nigrohumeralis* do not extend up to lateral margin of elytra and are separated from the margin by narrow yellow line, while in *C. cherrapunjiensis* black humeral spots at least in humeral angle extend to the extreme lateral margin of elytra.

Other Oriental species with black humeral spots belong to the different groups. *C. postarcuata* (CHEN et ZIA, 1964) and *C. tuberculata* MEDVEDEV et EROSHKINA, 1988 differ in black basal spots on explanate margin of pronotum (immaculate in *C. nigrohumeralis*), tuberculate elytral disc (not tuberculate in *C. nigrohumeralis*), partly black ventrites (uniformly yellow in *C. nigrohumeralis*), claws with basal tooth (simple in *C. nigrohumeralis*), and very long, filiform antennae (moderately long in *C. nigrohumeralis*). Dark form of *C. desultrix* (SPAETH, 1914) with black humeral spots distinctly differs in elevated X-shaped yellow postscutellar elevation (no x-shaped elevation in *C. nigrohumeralis*), apparently appendiculate claws (simple but appearing appendiculate due to distally projecting flanks of last segment of tarsi), and very thin, uniformly yellow antennae (moderately thin, with black apical segments in *C. nigrohumeralis*). *Cassida sigillata* (GORHAM, 1885) has dorsal coloration similar to *C. nigrohumeralis* but elytral colour is never as deep black as in *C. nigrohumeralis*, ventrites are partly black and claws have basal tooth. *Cassida truncatipennis* (SPAETH, 1914) is almost twice larger, with elytral and pronotal disc never black, tuberculate elytra, and claws with basal tooth. Colour photos of all compared species are available in BOROWIEC and ŚWIĘTOJAŃSKA (2002).

#### DESCRIPTION

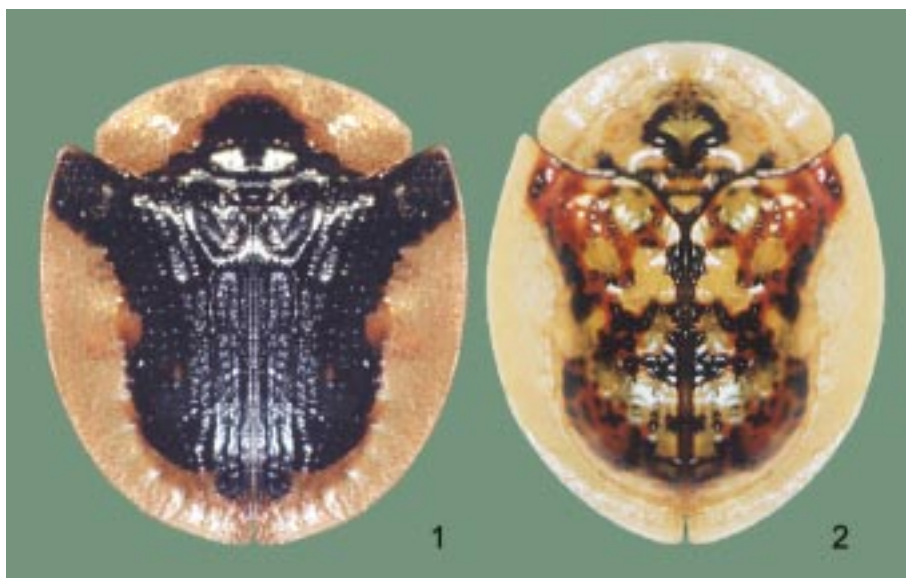
Length: 5.3 mm, width: 4.4 mm, length of pronotum: 1.7 mm, width of pronotum: 3.3 mm, length/width ratio: 1.20, width of pronotum/length of pronotum ratio: 1.94. Body almost circular (fig. 1).

Pronotum yellow; disc with a large, black spot, occupying almost whole surface except lateral lobes, anterior margin of the spot rounded. Scutellum black. Elytral disc mostly black, except yellow lateral fold and apex of slope, in humeral half of disc black extending to marginal row. In 2/3 length of fourth row there is a very small yellow spot. Explanate margin yellow, with broad, black humeral spots separated from the extreme lateral and anterior margin of elytra by a narrow yellow line. Clypeus, thorax, abdomen, and legs yellow. Antennal segments 1-7

yellow, segment 8 brown dorsally and yellowish ventrally, segments 9-11 brownish-black.

Pronotum elliptical, 1.94 times wider than long, with maximum width in the middle, sides broadly rounded. Disc moderately convex, surface mostly impunctate, shiny, only shallow impressions on sides of disc and before its base with shallow puncturation. Explanate margin subhorizontal, its surface smooth and shiny, with honeycomb structure.

Scutellum triangular with transverse sulcus. Base of elytra distinctly wider than pronotum, anterior margin gently arcuate, humeri distinctly protruding anterad, angulate. Disc moderately, regularly convex with top of convexity in postscutellar point. Postscutellar impressions distinct, postscutellar area with a well defined H-shaped transverse elevation, borders of postscutellar impressions marked by a slightly elevated arcuate fold which are connected with transverse postscutellar fold. Posterior branches of the H-shaped fold with short external and internal transverse folds. Principal impression absent. Punctuation of elytra regular, rows impressed, punctures coarse, distance between punctures in rows mostly smaller than puncture diameter. Punctures on slope as coarse as in anterior part of disc, punctures in sutural rows slightly smaller than in lateral rows. Marginal row distinct, its punctures twice coarser than in submarginal row. Intervals narrow, on whole disc narrower than rows, partly linear, slightly elevated. Explanate margin of elytra sub-horizontal, in the widest part wider than half width of each elytron, shallowly and densely punctate, appears slightly irregular. Elytral epipleura bare.



1. *Cassida nigrohumeralis* n. sp.; 2. *Cassida eximia* n. sp.

Clypeus narrow, slightly longer than wide, with fine clypeal grooves, running in distance from margin of eyes, converging in a triangle with obtuse top. Surface smooth and shiny, with few small punctures. Labrum emarginate to 1/4 length. Prosternal process strongly expanded apically, on sides with few oblique rows, apex rhomboidal, with few large punctures, its surface regular.

Antennae elongate, exceeding lateral margin of pronotum by their last two segments. Length ratio of antennal segments: 100:54:77:73:69:54:54:54:50:115. Segment 3 approximately 1.4 times as long as segments 2 and only slightly longer than segment 4.

Tarsi moderately broad, last segment not longer than the third, without projecting flanks, claws not reaching beyond marginal setae, simple.

#### TYPE

Holotype: "INDIA, Madras, Anaimalai Hills, Cinchona, 3500 ft., V 1976, 1, T.R.S. Nathan" (preserved at the Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Wrocław, Poland).

### *Cassida eximia* n. sp.

#### ETYMOLOGY

Latin "*eximia*" means unique, unusual. Named after its unique appearance.

#### DIAGNOSIS

It is unique species, with no close relatives in India and in the Oriental Region. Its elytral pattern with mixed black and reddish-brown spots is unusual, no Oriental species has black pronotal pattern forming S and reversed S figure. *Cassida ellipticollis* SPAETH, 1914, a species from the same region of southern India has similar body shape, simple claws, angulate humeri, elytral disc with no postscutellar impressions but with distinct principal impressions, and especially similar sparse puncturation, appearing slightly irregular. It differs in uniformly yellow dorsum or elytra with only a few very small reddish-brown spots, immaculate pronotum, more circular elytra, elytral base slightly more wider than pronotum than in *C. eximia*, and more acute humeral angles. *C. ellipticollis* is larger, with body length 5.2-5.5 mm (4.2-4.5 in *C. eximia*).

#### DESCRIPTION

Length: 4.2-4.5 mm, width: 3.3-3.6 mm, length of pronotum: 1.45-1.50 mm, width of pronotum: 2.6 mm, length/width ratio: 1.25-1.27, width of pronotum/length of pronotum ratio: 1.73-1.79. Body broadly oval (fig. 2).

Pronotum yellow; disc with a black pattern composed with S and reversed S figures. Scutellum yellow with black margins. Elytral disc on yellow backgrounds with reticulate black and reddish-brown pattern. Black forms a spot behind scutellum and surrounds some punctures, especially on top of disc, in posthumeral

area, and on slope. Reddish-brown forms irregular oblique spot between humeral callus and top of disc, and large spot on slope, both spots are marked with small yellow spots and punctures surrounded by black. Punctures on yellow parts of disc partly surrounded by reddish-brown areola. Last interval except area below humerus and apex of disc yellow. Explanate margin mostly yellow, only area below humerus with short, reddish-brown, humeral spots marked with black areolae surrounding first two marginal punctures. The humeral spots extending at most to 1/3 width of the explanate margin. Clypeus mostly yellow with brownish-black margins and basal corners. Elytral epipleura with large, brown humeral spot. Thorax, abdomen, and legs yellow. Antennae uniformly yellow, or last four segments dorsally slightly infusate.

Pronotum elliptical, 1.73-1.79 times wider than long, with maximum width in the middle, sides broadly rounded. Disc moderately convex, distinctly bordered from explanate margin, impunctate or with a few moderately coarse punctures. On sides of disc, border between disc and explanate margin distinctly impressed. Surface of disc shiny. Explanate margin subhorizontal, its surface impunctate and shiny.

Scutellum triangular without sulcus. Base of elytra distinctly wider than pronotum, anterior margin gently arcuate, humeri distinctly protruding anterad, with well marked but obtuse humeral angles. Disc moderately, regularly convex with top of convexity in postscutellar point. Postscutellar impressions very shallow, surface of disc without elevations, smooth. Principal impressions round, small but deep. Punctuation of elytra sparse, on central part of disc punctures are spread in large distance then punctuation appears slightly irregular, only in two sutural and two or three marginal rows punctures run more or less regular. Punctures fine, but appear larger because of surrounding areola. Punctures on slope as coarse and dense as in anterior part of disc, punctures in marginal row distinctly coarser than in central rows. Surface of intervals smooth and shiny. Explanate margin of elytra moderately declivous, in the widest part approximately as wide as half width of elytron, its surface smooth and shiny. Elytral epipleura bare.

Clypeus narrow, 1.2 times as long as wide, with fine clypeal grooves, running close to margin of eye, converging in a triangle with obtuse top. Surface smooth and shiny. Labrum distinctly emarginate to 1/4-1/3 length. Prosternal process moderately expanded apically, flat, its surface regular. Prosternal collar well marked.

Antennae slim and elongate, exceeding lateral margin of pronotum by their last two segments. Length ratio of antennal segments: 100:40:67:40:43:40:53:43:47:47:100. Segment 3 approximately 1.6 times as long as segment 2 and 4.

Tarsi slim, last segment not longer than the third, without projecting flanks, claws not reaching beyond marginal setae, simple.

## TYPES

Holotype and two paratypes: "INDIA, Tamil Nadu, nr Doddabetta Sanct., 8700 ft., 25 XII 1999, Rane Niles S." "Nilgiri Hills, Udagamandalam (Ooty)" (holotype and two paratypes preserved at the Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Wrocław, Poland; four paratypes preserved at the Department of Zoology, Modern College, Shivajinagar, Pune, India).

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